

PATENT APPLICATION

of

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for

PART CATCHER

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PART CATCHER

BACKGROUND

The present disclosure relates to apparatus for use with mold machines. More particularly, the present disclosure relates to apparatus adapted to handle parts
5 discharged from mold machines.

Mold machines are used to mold material (e.g., plastics material) into parts. Once formed, the parts may then be discharged from the mold machine for further processing.

10 SUMMARY

According to the present disclosure, an apparatus comprises an injection mold machine and a part catcher. The injection mold machine includes a fixed unit and a movable unit arranged for movement relative to the fixed unit between a closed position closing the mold machine so that the fixed and movable
15 units cooperate to form a mold cavity therebetween to mold material in the mold cavity into a part and an opened position opening the mold machine for discharge of the part therefrom. The part catcher is coupled to the fixed and movable units for movement relative thereto between a catch position arranged to catch a part discharged from the injection mold machine and a release position arranged to release
20 the part caught by the part catcher in response to movement of the movable unit relative to the fixed unit between the closed and opened positions.

The part catcher includes a first hand, a second hand, and a hand coupler. The first hand is coupled to a fixed platen included in the fixed unit. The second hand is coupled to a movable platen included in the movable unit. The hand
25 coupler is coupled to the first and second hands for pivotable movement of the first and second hands from the release position to the catch position in response to movement of the movable unit from the closed position to the opened position and for pivotable movement of the first and second hands from the catch position to the release position in response to movement of the movable unit from the opened
30 position to the closed position. In the release position, the hands cooperate to form a release opening therebetween for the part to fall therethrough onto an underlying conveyor. The hands close the release opening when they move to the catch position.

Additional features of the apparatus will become apparent to those skilled in the art upon consideration of the following detailed description exemplifying the best mode of the disclosure as presently perceived.

5 BRIEF DESCRIPTION OF THE DRAWINGS

The detailed description particularly refers to the accompanying figures in which:

Fig. 1 is a diagrammatic view showing molding of a part in a mold cavity formed between first and second units included in a mold machine when the
10 first and second units assume a closed position;

Fig. 2 is a diagrammatic view showing the first and second units assuming an opened position opening the mold machine for discharge of the part therefrom and showing a part catcher assuming a catch position to catch the part discharged from the mold machine in response to relative movement between the first
15 and second units from the closed position to the opened position;

Fig. 3 is a diagrammatic view showing the part catcher assuming a release position to release the part to an underlying part receiver upon relative movement between the first and second units from the opened position back to the closed position;

Fig. 4 is a perspective view showing an injection mold machine for molding a part (e.g., a bucket) and a part catcher coupled to fixed and movable units included in the injection mold machine for movement between a catch position shown, for example, in Fig. 8 to catch a part discharged from the injection mold machine and a release position shown, for example, in Fig. 10 to release the part to an
20 underlying part receiver in response to movement of the movable unit relative to the fixed unit between a closed position shown, for example, in Fig. 7 and an opened position shown, for example, in Fig. 8;

Fig. 5 is a perspective view of the part catcher of Fig. 4 in its catch position;

Fig. 6 is an exploded perspective view of the part catcher of Fig. 5;

Fig. 7 is an elevation view of the injection mold machine, with portions broken away, showing the fixed and movable units in a closed position closing the

injection mold machine so that the fixed and movable units cooperate to form a mold cavity therebetween to mold plastics material in the mold cavity into a part;

Fig. 8 is an elevation view of the injection mold machine, with portions broken away, showing the movable unit moved to assume an opened position opening the injection mold machine for discharge of the part therefrom and showing the part catcher moved to assume a catch position to catch the part discharged from the injection mold machine in response to movement of the movable unit to the opened position;

Fig. 9 is a plan view showing the part catcher of Fig. 8 in the catch position;

Fig. 10 is an elevation view of the injection mold machine, with portions broken away, showing the movable unit moved to assume the closed position and the part catcher moved to assume a release position to release the part to an underlying part receiver in response to movement of the movable unit to the closed position;

Fig. 11 is a plan view showing the part catcher of Fig. 10 in the release position;

Fig. 12 is a perspective view showing two part catchers coupled to fixed and movable units included in an injection mold machine configured to mold simultaneously two parts shown in Figs. 13 and 14;

Fig. 13 is a plan view showing the two part catchers of Fig. 12 in a catch position to catch two parts discharged from the injection mold machine; and

Fig. 14 is a plan view showing the two part catchers of Figs. 12 and 13 in a release position to release the two parts caught thereby.

DETAILED DESCRIPTION

An apparatus 10 includes a mold machine 12 and a part catcher 14, as shown diagrammatically, for example, in Figs. 1-3. Mold machine 12 includes first and second units 16, 18 arranged for relative movement between one another between a closed position shown diagrammatically, for example, in Fig. 1 and an opened position shown diagrammatically, for example, in Fig. 2. In the closed position, units 16, 18 close mold machine 12 so that units 16, 18 cooperate to form a mold cavity 20